having the large diameter nozzle, the claimed etching apparatus is configured, through the operation of the claimed transportation device, to etch the wafer first with the small diameter nozzle in the first vacuum chamber and then with the large diameter nozzle in the second vacuum chamber.

The Examiner admits that Nishibe does not teach or suggest the claimed combination of the small and large diameter nozzles. As a result, Nishibe cannot teach or suggest the claimed etching apparatus that etches the wafer first with the small diameter nozzle and then etches it with the large diameter nozzle, either

The Examiner failed to find this teaching of the claimed etching apparatus in Tanaka and thus relies on Shinozuka for the teaching. The Examiner finds that Shinozuka discloses three nozzles of different diameters 232a, 232b and 232c placed in one vacuum chamber and concludes that:

> The motivation for optimizing the size of the nozzles or making the nozzles adjustable in the apparatus of Nishibe and Tanaka et al is to optimize the size of the nozzles to meet the desired processing requirement (i.e. small for the fine etching and large for general etching) as taught by Shinozuka et al.

Applicants respectfully disagree. No part of Shinozuka discloses that the wafer should be first etched using a small diameter nozzle and then etched using a large diameter nozzle. The Examiner admits that the application of nozzles of different diameters is "only generically described" in Shinozuka. See page 3 of Action. That means that the Examiner recognizes the lack of a specific suggestion in Shinozuka to arrive at the invention.

However, the Examiner seems to contend that the order of the etching realized by the structure of the claimed device, i.e., the first etching with the small diameter nozzle and followed by the second etching with the large diameter nozzle, because it is a "desired" "polishing requirement." See page 3 of the Action. This etching order is indeed desirable in the claimed etching apparatus. However, this etching order is not obvious at all because persons of ordinary skill in the art would have understood that a desired polishing order would have been an etching with a large diameter nozzle, or "general etching" in the Examiner's

terminology, and followed by an etching with a small diameter nozzle, or "fine etching," as evidenced by numerous polishing techniques. In other words, the only evidence that applicants' apparatus fulfills a desired polishing requirement is applicants' own disclosures. Absent specific teachings in the prior art, persons of ordinary skill in the art would not have combined Shinozuka and Nishibe to produce the claimed etching apparatus to perform a fine etching first and a general etching second.

The Examiner also contends that "the specific process performed in the apparatus is an intended use of the apparatus" and thus the claim is not directed to the structure. See page 4 of the Action. The claimed etching apparatus is configured, with first and second vacuum chambers and small and large diameter nozzles respectively, to perform the fine etching first and the general etching second. Even if persons of ordinary skill in the art had combined the teachings of Nishibe and Shinozuka, they would not have configured Nishibe's etching device as claimed because the claimed etching order is contrary to the conventional teachings of the prior art, as explained above.

The Examiner is aware that none of the cited references discloses etching of a silicon on insulator wafer and contends that an apparatus claim is not limited by what is processed by the claimed apparatus. See page 4 of Action. Applicants generally agree with this statement by the Examiner. However, applicants point out that they found that the multiple spatial frequencies observed on the surface of a silicon on insulator wafer necessitate the claimed order of the etching as explained at paragraph [0024] of the specification. Without this knowledge of the multiple spatial frequencies which come only from applicants' disclosure, persons of ordinary skill in the art would not have combined the teachings of the cited references to produce the claimed etching apparatus.

The rejection of claims 5-17 under 35 USC 103(a) over Nishibe, Tanaka and Shinozuka should be withdrawn because they do not teach or suggest the claimed etching apparatus as a whole.

In light of the above, a Notice of Allowance is solicited.

In the event that the transmittal letter is separated from this document and the Patent and Trademark Office determines that an extension and/or other relief is required, applicants petition for any required relief including extensions of time and authorize the Commissioner to charge the cost of such petitions and/or other fees due in connection with the filing of this document to our **Deposit Account No. 03-1952** referencing **506212001200**.

Respectfully submitted,

Dated: June 7, 2005 By: _____

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